

**PRIVATE**

# ENTERTAIN

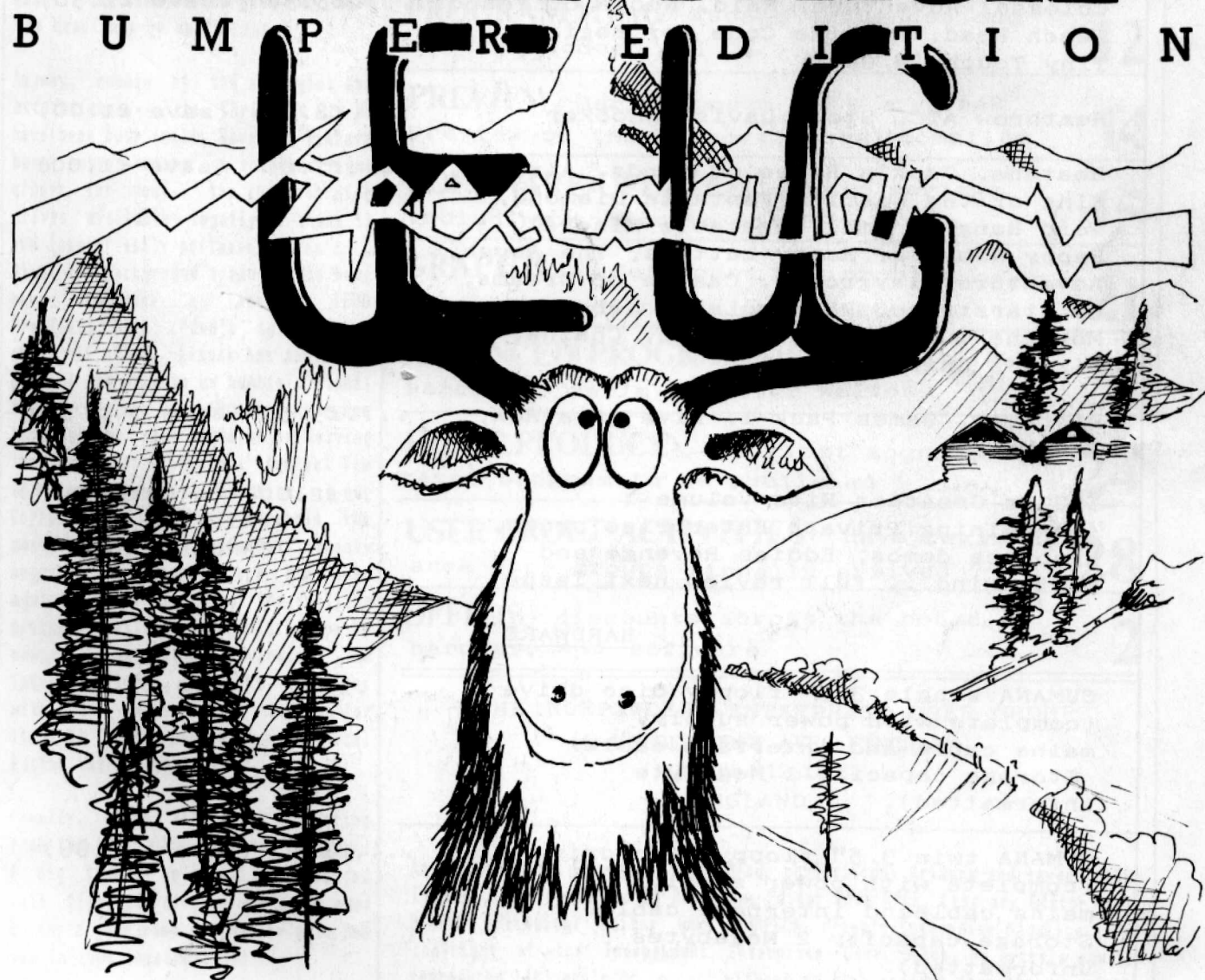
**magazine.**

NOVEMBER/DECEMBER  
1985

ISSUE 3  
An I.E.U.G publication

# CHRISTMAS MEGA THICK

B U M P E R E D I T I O N



**I.E.U.G**  
DISCOUNTS

MC.INTYES  
**deal**

Latest Software  
**reviews.**

Readers  
**views.**

PASCAL  
**Preview**

# Offers

Well, here's what everyone's been waiting for (including ourselves !). Basically, there's a saving of at least a pound on any software title currently available, rising to a massive £5.00 saving if you buy a ROM cartridge. Also, the most ridiculous disc drive prices ever seen due to Cumana's superb offer. Merry Christmas one and all ! Ho ho ho ! NB. At present these offers only apply to IEUG members resident in the UK.

## SOFTWARE

(All prices include postage & packing)

LISP, FORTH (ROM cartridges)	....£25.00 (save £5.00)
DEVPAC (cassette)	....£17.50 (save £2.50)
Cyrus Chess II	....£11.50 (save £1.50)
Colossal Adventure, Raid, Nodes of Yesod, Beach Head, Machine Code For Beginners, Tiny Touch 'N Go	....£8.50 (save £1.50)
Heathrow ATC. Steve Davis' Snooker	....£8.00 (save £1.00)
Beatcha, Jack's House of Cards, Airwolf, King of the Castle, Fantasia Diamond, Word Hang, Animal Vegetable Mineral, Happy Numbers, Happy Letters, The Abyss, Adventure Playground, Castle of Dreams, 3D Starstrike, Devils Lair, Sorcery, Mordons Quest, Spanish Gold, Chains, Wizards Lair	....£7.00 (save £1.00)
Dictator, Games Pack 1, Five in a Row, The Market	....£5.50 (save 50p)
IEUG's Greatest Hits Volume 1 (containing Private Enterprise progs, graphics demos, Eddies Revenge and Mastermind... full review next issue)	....£2.00 (a bargain !) AVAILABLE JANUARY

## HARDWARE

CUMANA single 3.5" floppy disc drive (complete with power supply, mains cable and interface cable. Storage capacity 1 Megabyte unformatted).	....£105 (save £5.00)
CUMANA twin 3.5" floppy disc drive (complete with power supply, mains cable and interface cable. Storage capacity 2 Megabytes unformatted).	....£180 (save £20.00)

PLEASE MAKE CHEQUES PAYABLE TO THE I.E.U.G.

# Editorial

Yahoo ! It's finally here ! The long-awaited Issue 3 of Private Enterprise magazine is now in your hands ! "Delayed again !" I hear you cry. Unfortunately catastrophes do occur - in this case Gary and I were struck down with the dreaded Lurgy while trying to escape from the aliens who had captured us while we were waiting for the disc controller and the correct prices for the software deal. The fact that there are only five of us who end up doing pretty much everything (including writing articles in the wake of the apathy seemingly present in this area !) means that if anyone goes AWOL then the deadlines go up the spout !

Anyway, enough of the apologies and accusations.... its Christmas ! We have been busy (well, Dave and Tim have been busy) sorting out some brilliant offers for you... the cheapest disc drives available legally (I think !) and lots of silly software prices ! Also, the background arrangements here have undergone a facelift. IEUG President Mark ("don't talk to me about life...") Lissak has passed on most of the work to us humble minions! The incredible Dave (Spider) Race now handles the news pages while delving 'or deals on the side. 'Auntie' Tim Box (the housewives' favourite) is our Correspondence man and controls the money supply. Meanwhile Neil (freaky megazap the aliens, oops I'm dead again) Blaber corrects the spelling mistakes (well.. Literary Editor to be pompous) inbetween reviewing the latest software, a tasks he shares with Gary (wake me up in time for Issue 4) Thomson who is also Technical Editor extraordinaire.

Finally, we're all just recovering from the first IEUG national meeting ! A big thumbs up to all who attended (all fifty-odd of you) - I don't need to say a good time was had by all. See you in 1986 (hopefully) !

Neil Blaber

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ENTR  
magazine.

Nov/Dec  
1985

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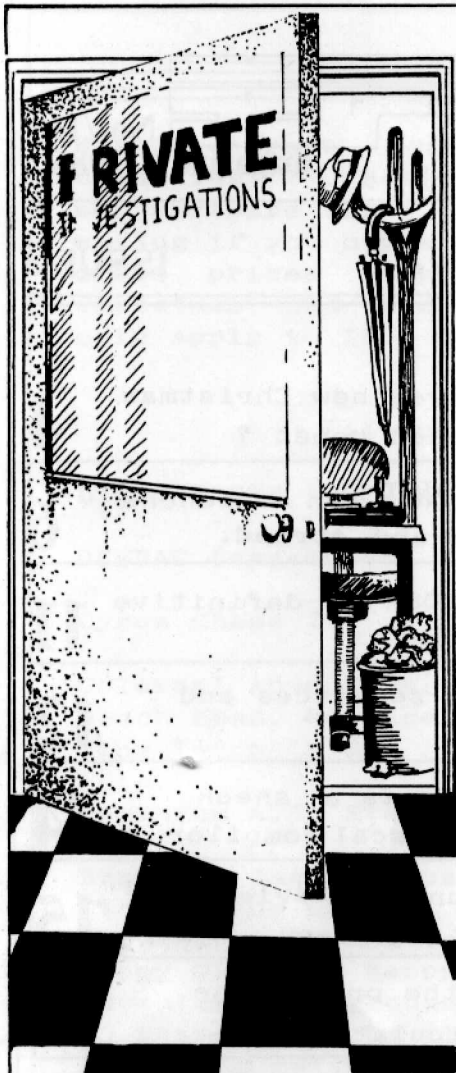
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## Bargain drives

Cumana have started manufacturing 3.5" disc drives in distinctive 'Enterprise grey' at the very low price of £199.95 and £109.95 for the dual and single drives respectively. These drives are double sided, double density units with a built in power supply and offer real value for money (even cheaper if you choose to take advantage of our disc drive offer - see the Deals page for details !).

It is possible that Enterprise may be releasing a disc drive with built in EXDOS disc interface for the German market. However it is still in prototype form and it is uncertain whether a commercial version will eventually be made available.

# News Desk

## A Mc Intyre Xmas

In a pre-Christmas advertising campaign, Enterprise, in conjunction with McIntyre Marketing Ltd. have announced two mail order package deals on Enterprise products.

The first package will include an Enterprise 128, a data recorder, joystick interface, joystick and five software titles all for £199.95. The normal retail price would be £338.55.

The second package includes a 128 computer, Fidelity TV/monitor, joystick interface and five software titles. Normal retail price would be £529.90. Through the McIntyre/Enterprise deal these products can be purchased for £299.95.

The software titles are Steve Davis Snooker, Nodes of Yesod, Machine Code for Beginners, Star Strike 3D and Beach Head. The advertising is being restricted to the national press and the packages are only available by mail order direct from McIntyre Marketing Ltd.

A spokesman for Enterprise could not give exact details on how long the deal would last but doubted whether it would be continued after Christmas.

## No more hard times

A fair bit of news on the hardware front this month. Firstly, the disc interface you've all been waiting for should be available as you read this (the official release date is November 1st), priced £99.95. See the review later in this issue which should remove any doubts as to how brilliant EXDOS actually is.

Internal RAM expansions for 64K owners are available now, at cost price to those who paid the original £250 for

their machine. The external RAM expansions have unfortunately been delayed until after Christmas... Oh well, no 4 megabyte machines yet.

Subject to negotiations with the powers that be, we should soon be able to offer IEUG members a joystick with built-in interface to connect directly with the Enterprise (providing it passes the IEUG quality control process !). This will be manufactured by Aztec and will be based on the Vulcan Gunshot joystick, with auto-fire option. More news next issue.

Finally, the mouse and Speakeasy (conspicuously absent at the PCW show) should also be with us in the very near future. The mouse will be released with some software of the icon-driven type, although don't expect anything to rival the Macintosh just yet. The Speakeasy will have 2 text decoders - English and German, with more on the way including French and Danish. These will allow the unit to pronounce normal text, this being an improvement upon the standard Allophone system.

## At last

There is a lot of movement on the software front at the moment, as can be seen from the reviews later on.

Software companies are at last making some use of the advanced features of the Enterprise, notably the sound chip, "Dave". The following titles are scheduled for release by the end of November :-

Lands of Havoc	(Microdeal)
Super Pipeline II	(Taskset)
Frank Bruno's Boxing	(Elite)
DEVPAC	(Hisoft)
Airwolf	(Elite)



The Abyss	(A.I. Products)
CadCam Warrior	(Taskset)
King of the Castle	(A.I. Products)
IS-Forth	(Intelligent Software)
Race Ace	(A.I. Products)
Pascal	(Hisoft)
Wriggler	(Devonshire House)
Wizard's Lair	(Bubble Bus)
The Artist	(Loriciels)
Falcon Patrol II	(Virgin)
Database	(Gemini Marketing)
Submarine	(Semicap)
Basic Compiler	(Aztec)
Machine Code for Beginners	(Dream Software)

Things are at last looking healthier in the software field - with thirty titles (including some essential utilities) on the way before Christmas, we should be able to look forward to many enjoyable evenings of keyboard bashing in front of a nice blazing fire !

## Domarks Dodo

Domark have finally given up trying to produce 'View to a Kill' on the Enterprise. This title was announced many months ago as being available on a number of machines, including the Enterprise. However, after many delays and excuses the title has now been dropped. It seems that there were a number of problems in getting a good scroll routine to work on the Enterprise (perhaps they should have had a word with Q!).

Good news to all owners who sent off a cheque for the non-existent program. Not only will Domark be refunding their money, but they will also be offering compensation to everyone; although it's not clear at the moment what form this compensation will take.

Incidentally, Domark will be bringing out a new title, "Friday the Thirteenth", for the Christmas market, so if you have a good scroll routine (or any programming skill at all, by the sound of it - ED) get in touch with them !

## Enter-poll

53% of computer owning parents have never used their computer, and less than one in ten believe they know more about computers than their children.

This was one of the findings in a MORI poll commissioned by Enterprise recently. The report also stated that of the 329 children and 201 parents questioned, 54% use a computer at school and less than half found those lessons 'fun'. 25% use illegal copying as their most favoured form of obtaining programs. Over 50% of the children and adults just play games and less than one in five get involved in programming. Computers also seem to have developed into a 'boys toy'.

One in three parents have had to return a faulty machine to the retailer. It was also found that a third of the parents would spend £250 on a new computer, Sinclair owners being more likely to upgrade than Commodore owners.

The conclusion of the report was that a computer 'Generation Gap' existed and that this should be taken as both a warning and a challenge to the industry.

## The Euro connection

We really are "no longer alone" - two new User Groups have started up in Norway and Holland - the Dutch group had their first meeting a few weeks ago,

We would like to welcome all European readers of the magazine, and look forward to any contributions you would like to make.

## Effective ?

I wonder how many readers have noticed Enterprise's 'subliminal' advertising campaign that is being run in Popular Computing Weekly ?

Those that haven't should turn to the contents page of a recent issue, presuming they have one, and look down at the bottom of the page. There, before your eyes, will appear a quote about the Enterprise that was previously impressing itself upon your subconscious - fiendish, eh ?

This campaign has been going on since the end of September and will continue until Christmas. We would like to see any figures regarding its impact on the buying public !

## Obituary

As many readers will now know, Argus Specialist Publications have ceased publication of most of their computer orientated magazines - in fact they now have only four paper computer mags left. Amongst those that went was Home Computing Weekly, a magazine that has given us, and Enterprise, quite a bit of support - it was HCW, in fact, who gave Private Enterprise our first public airing as a feature spot in their news pages.

**DAVE  
RACE**

## FLOOD!

Well, let it not be said that IEUG members can't take a hint - since last issue's request for mail, we have been inundated - keep it up!

Before we look at this issue's crop of letters, I must tell you what has been going on down here at IEUG Headquarters. We have been playing organisational musical chairs! While some of us have sat down in our old seats, others have taken over the responsibility of new jobs. One of mine is the Letters page, a task I must say I'm enjoying.

A few things are going to change - none of them I hope for the worse. To start with, we have a new address for correspondence:

Tim Box,  
60, Holdenhurst Ave,  
Finchley,  
LONDON N12 0HX,  
ENGLAND.

This does not mean any letter that goes to 40 Mansfield Road will be ignored, just that it may take slightly longer to be dealt with. This brings me to my second point - replies. While every effort will be made to answer your letters, I cannot guarantee that they will all be done personally. It may be that your letter will not be answered until it has been printed. This change of tack will not, I hope, dampen the enthusiasm I'm getting from you in your correspondence.

If you have any suggestions towards improving this feature don't hesitate to drop me a line. Remember it's your page, use it!

### Dealer problems

I was very impressed with your first magazine (why didn't you write the programming guide?)

The activities page was of special interest to me as I would like to meet some other Enterprise users. I would

# PRIVATE

## Correspondence

**gossip, outrage, it's your page.**

like to know if members' names and addresses could be published in, or distributed with the magazine so that members in the same area could contact each other and arrange a get-together.

I have not yet found a shop in greater Manchester which stocks or is prepared to stock the Enterprise and have only seen two magazines, apart from yours, publish anything other than reviews. Shouldn't we, as users, sell our programs to magazines so that people will know there are some of us about.

If all IEUG members, and friends go into all the computer shops they come across and ask for hardware and software for the Enterprise, the shops may realise that a market does exist and start to stock the goods. Products will be displayed, so if this happens before Xmas.

Which printer did you use for the majority of the text in the magazine? Also has any one cracked the problem of reading a text screen from within a program? Is it possible to list f106: "filename", see page 177 under 'SAVE', to dump an ASCII file to tape, as it will not work for me.

Phil Cohen.  
Manchester.

TB. If you look on the User Group Activities page there should be more details about setting up local area groups. You are not the only one to have problems with obtaining software, hopefully our software Discounts will alleviate the suffering and provide a source for future purchases. The printer used in this mag is a Canon

PW-1080A with NLQ. To dump an ASCII file to Tape just. OPEN fchan "tape: filename" access output. LIST fchan: line-no-start TO line-no-end. CLOSE fchan.

### Complaints ???

First, congratulations. The initial issue of Private Enterprise was quite impressive - well written (mostly), decently wide ranging and a good mix, although the article on channels good as far as it went, didn't go far enough. Lot of spelling mistakes too, no excuse for that even if among other things the Enterprise WP lacks a spelling checker. Software reviews were good too.

Second, channels. Even though channel architecture is incredibly versatile it can also be a minefield for the unwary or just the plain ignorant (like me). I am trying to write a database for my Enterprise and have run into a brick wall. It happened when I tried to set up a non-standard Editor window to use with the LINE INPUT command. Under no circumstances can the computer be persuaded to print the data in the new window as it is typed in. The circumstances include redefining channels 0 and 102, using one of the free channels and swearing! If f102 or f0 are used the computer hangs up. If a new channel is used the input is printed on f102 no matter where it is told to go to. I suspect that the system variables need to be redefined, but guess what the technical manual tells you about them, and guess when the technical manual will be available. If you can answer this lot,

# Private Correspondence

not only are you super men it might even make me write another superbly grovelling letter which will be even longer.

P.S The WP can't use all the memory of the 128 (and perhaps the 64) and it doesn't tell you when it runs out it just erases the document starting at the beginning. Nice one IS.

David Good  
Derby

TB. Thanks for the praise - most appreciated. So, someone else noticed the odd mistake or twenty - hopefully there should be less from now on. Solving the line input problem took me a few minutes to solve, but at last I found the answer.

(1) Close £102: and £0.

(2) Open a text video page the size you want it (no smaller than 5 across and 3 down) and number it £102.

(3) open £0: "EDITOR:".

(4) Display £102: From now on this is used for input etc.

## All to much for Eric

I've been waiting for Issue Two for over a month now. I almost gave up hope, thinking it probably got lost in the post... until it arrived a few days ago, finally! Just seeing the large white envelope made my heart jump, opening it revealed another surprise : Issue 2 is all glossy! Smart isn't it? Who knows, the cover might be in full colour next time!

My favourite article in Issue One was Outside Connections - it permitted me to build my own printer and stereo cables, as well as a joystick interface. The programming feature in issue two is quite revealing - I haven't investigated all the "controls" and "escapes" yet. I decided to write this letter first.

I know the IEUG is crying out for contributions from members. So, I've been thinking about what I could contribute. Programs? Mine are usually long and not spectacular. Programming tips? I've always wondered "where do they get these tips?" Articles? I hardly know more about the Enterprise than the average user. However if there is still no article about "sound" in issue 3. I might write one in spite of my limited knowledge. Anyway, when I can afford to buy the Lisp cartridge I'll send you a few Lisp programs.

A few questions concerning the disk controller EXDOS : is CPM-80 included in the price? Will it read CPM disks for other machines such as Amstrad or Apple? In what size disk format will software be released?

Eric Lew.  
London.

TB. Included in the price of EXDOS is IS-DOS, a CPM emulator (Enterprise will supply you with a disc containing this upon returning a card supplied with EXDOS). I have seen it read Amstrad discs, although it required a utility program to do so. As for Apple discs, so long as you have the right size disc drive. I cannot see any reason why it would not be possible read them. In answer to your last question, the Enterprise standard for disc-based software releases is 3.5", 40 track, single sided, although with EXDOS any 3.5" drive will be able to read this.

## View from the fjords

I read about you in the latest issue of 'The Enterpriser' - a magazine for members of the "Official" Enterprise club in Norway.

Until a short time ago, I was seriously thinking of starting an independant user club here in Norway.

But I found out that it would demand too much time and effort working alone, so I gave up. Therefore, I'm very glad to see that somebody has got enough guts to start it.

Here in Norway we have the great disadvantage of having greedy businessmen as the sole importers of Enterprise equipment and software. It is terrifying to see how much we have to pay. I will give you some Examples: (compare them with your prices!)

Enterprise 64	£348	
Enterprise 128	£417	
Enterprise mouse	£80	
Enterprise Speakeasy	£56	
Enterprise memory expansion approx.	£100	
Enterprise Printer	£348	
	UK	NORWAY
Enterprise software	£7.50	£ 14
	£10	£ 17
eg Lisp		£ 43

Even if we have a two-year warranty, 20% VAT plus freight from England to Norway, there is no excuse for having such high prices. I have been looking for a company in England which can supply me and other Enterprise users here in Norway with hardware at cheap prices.

E.l.Rossebo  
Norway.

TB. I'm sure the rest of our readers like myself will agree that £417 for a 128 is just a touch expensive (to say the least). But as they are the sole importers there doesn't seem to be much that can be done. If we come up with a supplier in this country we will let you know.

## Who shot J.Jim?

Thanks for the user group and the 2nd issue of an excellent magazine. It's



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good to know there's life out there, but is there life over here? I'm having great difficulty in finding a dealer stocking any of the limited software - this includes the list of stockists supplied by Enterprise none of whom even appear to stock the hardware either. So don't forget us over here when the cut price peripherals and software become a reality. I hope the same mistake isn't made again in distributing, as with the computer. I had to buy my Enterprise 64 through Dublin at inflated prices including 23% VAT.

I'm not a computing genius in fact I must admit a lot of it is over my head but I would appreciate an article on the sound chip Dave and how to get the most out of it in programming.

Now for a few gripes at Enterprise, where is all the advertised software such as Stud Poker, Jungle Jim, Supersonics and the Basic to Basic converters, also where is that basic overlay that was promised with the demo tape?

Also I have become one of the unlucky 5% who had to return a faulty machine. The fault was with the rom cartridge which was on Eprom and caused the machine to crash. I was also disappointed when it was returned with the old 2.0 version instead of the new 2.1 version.

M. Gallagher  
Co Derry

TB. You too seem to be at the mercy of the distributor. Why not get a relative in England to send you the items you require - it must be cheaper than paying those prices. You bring up some good points about the software. Come on Enterprise, let's have some answers, we know you read this magazine. We won't forget you in our software deals, remember you are 'no longer alone' (All puns intended).

PS. The Basic overlay is in fact the INTERLACE program.

## Transforming

After your plea for letters I'm writing this to 'ye all'. Firstly, I don't profess to being a proficient programmer. I would rate myself as slightly passable so that's why I didn't enclose anything.

Now, with that finished on with the show. I upgraded from the Spectrum and naturally discovered a few differences. On the Spectrum I had a simple accounts program running so I made an attempt on a conversion. This proved to be easy, until I ran it! On the ZX I loaded the info into arrays then broke in to make a few corrections. To run the program I pressed goto so as not to erase the data. However on the Enterprise I can't do that and it really annoys me.

Another thing that annoys me is the power transformer. I am onto my second power transformer costing me £24. Why?? The wire keeps breaking out where it leaves the transformer. Already I have had to wrap insulating tape round it. Has this happen to anyone else?

Leslie Aust.  
Dublin.

TB. You're not the only one who's had trouble with the transformer. I myself found the same trouble but noticed it early and insulated it with glue gun plastic (fantastic stuff - I swear by it).

## Pirates bashed

First of all YES there are people out there (here). How many I'm not sure as my member number appears to be 119. Only 119 of us or it could be 779.

Second PIRATES....I have an A???I (five letter words not allowed). Some

of the software for this machine has been particularly expensive i.e thirty to forty pounds in some case. Mule £28.95, ZORK set £35 each. JUNBO JET PILOT thirty pounds etc. Still, I did not write to complain to you about the expensive software for other machines. Anyway prices are coming down. The point is that you can't go out and buy much software like this because most of us can't afford it. But when you do and the quality is poor then you start to think about other means of obtaining it. I don't mind paying 10 to 20 pounds but that's me. What about people in the low income bracket (kids) seven or eight pounds might be a lot to them.

My conclusion is copying is relative. Relative to cost/quality. Relative to cost/own finances. Relative to media. By this I mean disk or tape.

This brings me to my next point disk drives and EXDOS. If Enterprise do release software on disk what format will it take? Will it be compatible? I can't see Enterprise or anybody else stocking a hoard of different formats.

Bob Tiffen,  
Brentwood, Essex.

TB. I hate to tell you this, your number isn't either of those two, it's 219. We made a mistake in the numbers. Enterprise will only be stocking two disk types 3 1/2 40 track and 5 1/4 40 track. The reason for this is EXOS can read a 40 track disk even if its in an 80 track drive. You bring up some very valid points about piracy, some of which I have to agree with, but see what our next letter has to say about it.

## ...and slammed

Thank you for your prompt response to my application for membership of the I.E.U.G.

# Private Correspondence

I especially appreciate the user magazine upon which I feel I must congratulate you. It seems to be a fine start - but, please, do not let it ever become a mere collection of listings of more and yet more computer games, as some commercially available magazines dedicated to lesser computers are. There are other things in life!

I am one of those apparently rare people who actually use a computer for computing. As a professional mathematician, I have used mostly APL on a minicomputer for statistical work, and although admiring the conciseness and flexibility of that language have become increasingly aware of its great limitation - an almost complete absence of 'structure'. Programs written by oneself appear to be so much incomprehensible gibberish after a very short while: understanding them becomes a work of art and amending them wellnigh impossible.

Becoming disenchanted with languages which lack structure features, I have waited for nearly two years for the Enterprise ne Elan! I even managed to wait long enough for the 128K model. It is, obviously, a recent purchase and, as yet I have no dedicated peripherals. I look forward to your reviewing these, as you have done for the EP80+ printer. With my background in mind, you will not be surprised at the following comments:-

1) Your correspondent who is so kinkily 'keen on software' seems to tipify the present age of craving something for nothing. Probably he has not written, is not willing to write, or is incapable of writing, acceptable programs of his own. It is fascinating but hard work - time-consuming, frustrating and infuriating hard work (I write from experience of seeking the eigenvalues of a matrix rather than the treasures in a cavern but I'm sure the principle is the same).

Anyone who wants the fruits of such labours for nothing should not be dignified by the romantic name of 'pirate'. Let us call a thief a thief.

2) Is it not just a little odd that your very first listing in your very first issue should contain a DIM, an ON GOSUB and three assorted unconditional GOTOs? Or was this a partial translation from one of the more primitive languages, e.g. Microsoft BASIC? (The author himself seems to have experienced some sort of conversion; his second program is mercifully free from such antiques).

3) The Enterprise manual is reasonably good, as manuals go. But can Enterprise be persuaded to fill in the glaring omissions with a supplement? In particular, where are tables giving the character set, the alternative characters and descriptions, however brief, of the 256 available colours?

John Smith,  
Burton upon Trent.

NB. Many thanks for the praise - hopefully the quality of the magazine will continue to improve. I think you have nothing to fear as far as content is concerned - "Home Produce" seems more in danger of becoming a collection of graphics demonstrations than anything else at present! As far as structured programming is concerned, I think you may find the Pascal preview in this issue of interest (a series of articles concerned with structured programming techniques applicable to any language should be appearing soon). As for the other points you raise, I will take them in order:-

1) We at the IEUG fully agree with your attitude on software theft. Any misuse of the User Group in this area will not be tolerated.

2) The listings in Issue 1's "Home

Produce" section are written by ordinary members of IEUG. Many people have not yet come to grips with the power of IS-Basic, a situation which will be remedied in time. Instead of condemning the use of certain outdated structures, we should be educating people in the use of the better alternatives.

3) The Enterprise Advanced User manual will be available "early in 1986". However, we hope many items missing from the basic user guide will be covered in this magazine - in response to your request for a character set table, this will be included in Issue

4) As for the colours, it is a little difficult to describe 256 colours uniquely ("sort of light bluey-greeny grey..."), but maybe someone would like to attempt a cut-down version.

## HINTS and Tips.

Our first offering of Hints and Tips comes from Andrew Richards of Telford, if you have any drop us a line and tell the world about them. (Well it may not actually go all around the world but we do distribute to England, Ireland, Scotland, Wales, Norway, Holland, Arabia etc etc).

To get round the ALLOCATE bug do the following. First OUT 177,254. This sets up addresses 16384 to 32767 as in segment 254. This should be repeated after an error. Then type POKE 540,0 and POKE 541,64, this sets the code pointer to address 16384 and gets rid of the need for ALLOCATE and keeps the variables safe.

LOOK £105:A waits for a key to be

# Private Correspondence

pressed and puts the ASCII value in A.

PRINT [255:"X". Prints X on the top left of the status line.

PRINT AT will not work on the last column of an EDITOR channel because of word wrap and the margin. Use PRINT [102, AT X,Y: instead.

SET can also take a number in the form SET X,Y. X is the option number and Y is the value. There are 38 options. You will have to test to find the one you want! 1 is STOP. SET 1,1 simulates pressing the STOP key. 6 is SHIFT and 3 is ALT. All these system variables are stored in segment (memory page) 255 at address 16329 onwards. So SPOKE 255,16329+6,1 will turn CAPS lock on,

Control of segments is through OUT N, X. N is a number between 176 and 179, donating the 16K area to put the segment in. 176 is for addresses 0 to 16383 etc. X is the segment number. 0 is EXOS, 1 is BASIC functions, 4 is BASIC commands, 252 to 255 are RAM. IN (N) returns the segment number in that area.

In your article you recomend HEX. WORD\$ is easier.

PRINT [101: chr\$(27)"E" WORD\$ (50) WORD\$ (50)

will draw a circle 50 units wide. Negative numbers may also be used for relative drawing. Escape sequences also work on different devices except different escape sequences.

LOOK and GET can be used on text channels (somebody said you can't). They return the ASCII value (for LOOK) or character (GET) under the cursor.

Address 562 points to the Command Table. 3 bytes after this comes the number of commands and the A list, 3 bytes per command. The first two bytes are the address of the command info, and after that comes the segment (

ignored). The address points to a table. 2 bytes for RUN address and 2 for INPUT address, 1 byte for the type of command (83 is normal) and 1 byte for name length and then the name itself. Use this to find out about the in-built commands. The run address is called when the command is executed, the input address checks if what comes afterward is correct. A disassembler is vital to understand this and to change the table.

Devices are stored in segment 255 at about address 11000. Before the device comes a byte containing 0, if device is on an address and segment of a table of addresses. The tables first two bytes contain the address to call on an interrupt and then a list of call addresses for each of the calls up to 8, shown on page 201 of the manual.

LD A,0 , LD B,"A" , RST 48 , DB 7  
will print an "A" on channel zero ( machine code).

LD A, 105 , RST 48 , DB 5  
will wait for a key pressed and return it in B.

All of this information should be experimented with so you can understand it fully ( it would take a long time to explain in detail). I hope it is of use to you.

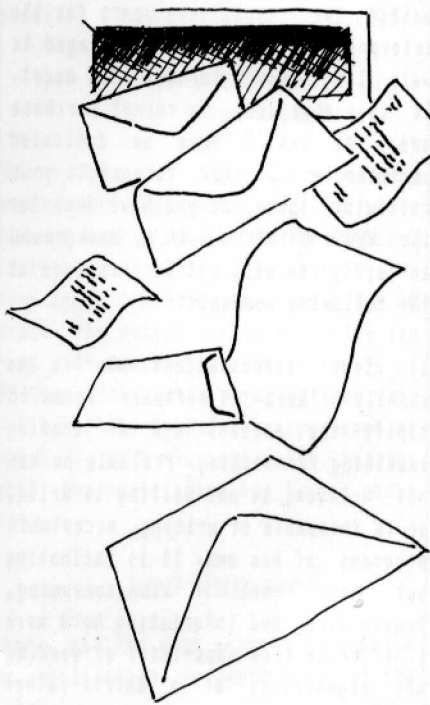
PS Who says Enterprise has BMW's image?

Andrew Richards,  
age 14 1/2.  
Telford.

TB. Thanks for your useful contribution - I'm sure many people will find the contents of your letter to be of great value. You touch upon some subjects many people are interested in but lack the technical expertise to explore fully - how about writing us a full-blown article ?

To conclude this Issues 'Private Correspondence', I would like to elaborate on what Phil Cohen said about getting ourselves heard. Enterprise have got themselves into a Catch 22 situation - people don't want to buy a machine they have never heard of, and if no machines are sold the Enterprise will remain unknown. Enterprise can only get out of this situation through heavy advertising, but while they get on with that, we can make our own contribution. Write to the press informing them of the virtues of the machine - you could even start up a 'Mines Better than Yours' slagging match if necessary ( you know we would win !). In fact, stop at nothing to get the name of Enterprise known - it can only help us in the end !

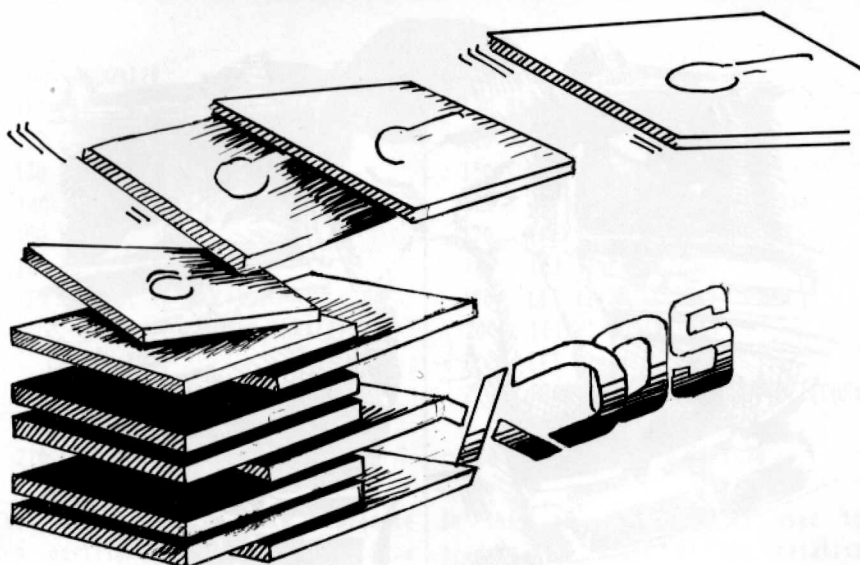
P.S While you're at it, educate the people that the next best thing to Enterprise is the IEUG and Private Enterprise (plug plug).



Tim Box



## ≡A long hard look≡



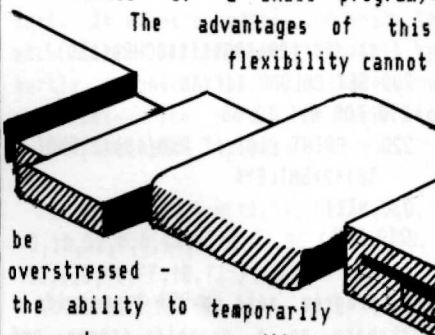
Before we start, apologies to the reader - this is not a full review of the EXDOS disc controller, but just a preview to whet your appetites. We received a copy of the controller to test and were hoping to write a full hands-on review, but unfortunately Murphy's Law prevailed and the miserable thing didn't work (it was the first one we'd ever seen a fault on!).

The interface slots into the Enterprise in two parts - a small adaptor unit (bodge) and the actual controller. The bodge unit exists because the controller is designed to plug into a motherboard-type socket rather than on the User port on the Enterprise. We felt this this arrangement made the controller difficult to attach, and may prove a problem if you tend to move your machine around a lot.

Once connected and powered up, on typing HELP you discover you have an extra device (:EXDOS). Typing HELP EXDOS gives you a list of all the available EXDOS commands. These commands can be accessed either by preceding the command with a colon or by using the EXT command. Alternatively you can use the EXDOS environment - this is accessed by

typing :EXDOS or EXT "EXDOS". This puts up a special (purple) window at the top of the screen, within which you can use EXDOS commands without the preceding colon. To leave the environment, the ESCAPE key returns you to whatever you were doing previously at the point where you called EXDOS (be it editing or the middle of a BASIC program).

The advantages of this flexibility cannot



be overstressed - the ability to temporarily suspend a program or edit to play around with your files is indispensable.

The operating system is largely based upon MS-DOS commands and file format. Discs can be formatted as 40 or 80, single or double sided. This allows an 80 track drive to use a disc formatted on a 40 track drive, etc. Files on disc are held in directories (groups). These directories can exist in a hierarchical structure - this means that directories can also contain other directories (sub-directories).

The user can look at the contents of directories by use of the DIR command. Filenames are given as a nine character (maximum) name together with an optional three character extension (see the "Home Produce" section for guidelines on filename extensions). Also present for each file is its size in bytes, and at the bottom of the display the number of bytes left unused on the disc.

Directories can be created using a single command (MKDIR); to actually access the directory the command "CD name" is used. The name given to CD can be the directory name or a "route". A route consists of a sequence of directory names in the form dir1\dir2\dir3...etc. where "dir1" contains "dir2" and "dir2" contains "dir3". A single command (RMDIR) will also delete a directory, but will return an error if that directory is not empty.

A special feature not commonly seen as a built-in feature is the facility to produce a RAMDISK. This is stored in memory rather than on disc but is otherwise treated exactly the same way as a normal disc. This allows MUCH faster access to files copied onto it. The size of the RAMDISK is determined by the user in units of 16K. RAMDISKs remain in memory until a total system (hard) reset.

We have barely touched upon the features and possible uses of the disc system in this article - suffice to say that we were incredibly impressed. It is the most versatile disc system available for any micro in the sub-£600 range. We will be delving into the system properly, including some of the advanced features (such as batch files and low-level control), in the full review to be published in Issue 4 (no fear of dud review material here... we're buying some!).

**Neil Blaber  
Gary Thomson**

# Programming

We have now seen how to affect the screen using control codes and escape sequences. I will finish off this article with some hints on their usage, and also a few examples.

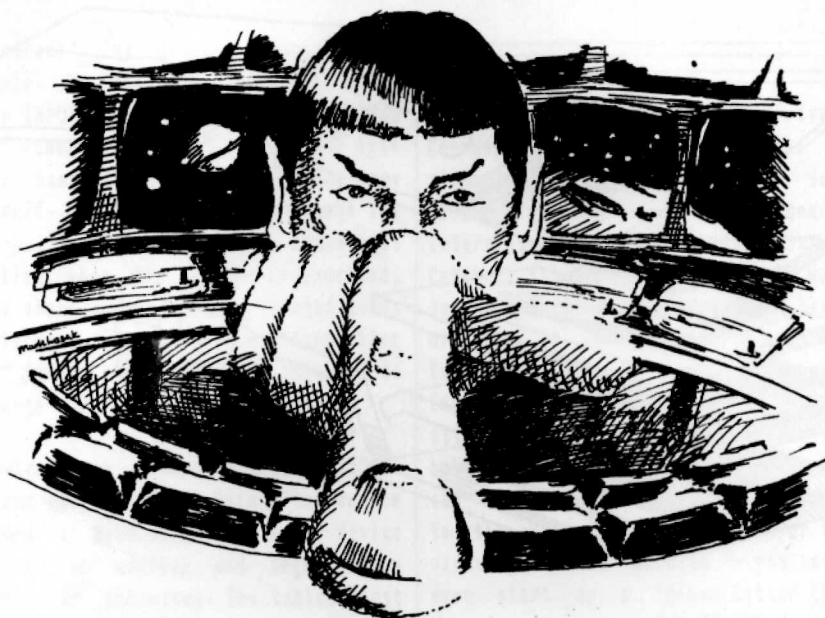
As you have probably noticed both `HEX$` and `CHR$` produce strings. Now, these strings could quite easily be placed in string variables just as any normal string could. However, printing a string containing a control code or escape sequence will cause that command to be executed. For example, in the section on cursor movement an escape sequence was given to produce a backspace on a graphics screen. There is no reason why this sequence should not be placed in a string variable, say `BS$`, so that whenever a backspace is desired, all that needs to be printed is something like:

```
PRINT [101:BS$;
```

This is somewhat shorter than typing out the entire escape sequence every time a backspace is required.

Following on from this, a string containing a control code could be merged with another string to produce complex results by just printing one string variable. The following program serves as an example of this idea. It uses several escape sequences to produce a single, multicoloured character on screen:

```
90 RANDOMIZE
100 SET CHARACTER 128,60,66,129,129,
    129,129,66,60,0
110 SET CHARACTER 129,0,0,0,0,66,60,
    0,0,0
120 SET CHARACTER 130,0,0,36,36,0,0,
    0,0,0
130 GRAPHICS
140 LET BS$=HEX$("1B,52,E0,FF,0,0")
150 LET IO$=HEX$("1B,49,0")
160 LET I1$=HEX$("1B,49,1")
170 LET I2$=HEX$("1B,49,2")
180 LET I3$=HEX$("1B,49,3")
190 LET SMILEY$=I3$&CHR$(128)&BS$&
```



## text & graphics handling

# PART II

```
12$&CHR$(129)&BS$I1$&CHR$(130)
200 SET COLOUR 1,CYAN
210 FOR N=1 TO 50
220 PRINT [101,AT RND(18)+2,RND(
    38)+2:SMILEY$
230 NEXT
240 END
```

The program sets up `BS$` to provide a backspace on a graphics screen, and `IO$` to `I3$` to produce ink changes-`IO$` is not actually used. The program then concatenates these codes with the characters set up in lines 100-120 to produce the string: `SMILEY$`. From then on printing `SMILEY$` to a graphics page will produce a multicoloured face. N.B. For some reason the Enterprise won't allow `BS$` to be printed at the last horizontal pixel position, hence the need for the unusual printing positions.

It is also possible to merge

numeric variables with these control codes. For instance, we might want to alter the ink colours which are used to print each part of the face in the above example. As it stands, the circle forming the head will always be printed in `INK 3`. If we change line 250 to:

```
250 LET I3$=HEX$("1B,49")&CHR$(RND
    (3)+1)
```

the circle will be printed in any one of the 3 ink colours, depending on the result of the `RND` function. Notice that the value we are concatenating with the main escape sequence has to be placed in a `CHR$` statement.

The following example demonstrates the merging of user input values with escape sequences. It also provides us with a `LOOK` command which will work with text screens:

# ≡Programming

```
100 RANDOMIZE
110 LET LOOK$=HEX$("1B,3D")
120 CLEAR SCREEN
130 FOR N=1 TO 152
140 PRINT CHR$(RND(26)+65);
150 NEXT
160 DO
170 INPUT AT 21,1:Y,X
180 PRINT [102:LOOK$;CHR$(X+32);
CHR$(Y+32);
190 LOOK [102:A
200 PRINT AT 22,1:CHR$(A)
210 LOOP
```

The program sets up LOOK\$ to produce the position cursor escape code. Line 190 prints this escape code to the text channel, followed by the user entered cursor position. Note that the offset value of 32 is added to X and Y within the CHR\$ statement. The cursor is now positioned at the desired location on screen and the LOOK command that follows on line 200 puts the ascii code of the character at that position into A. This technique could be used equally well to look at a computer generated position.

The idea of user input control codes could also be used to produce a crude drawing program, in which the user enters the x and y beam displacements and relative plotting is used to move the beam by that amount:

```
100 LET PLOT$=HEX$("1B,52")
110 GRAPHICS
```

```
120 PLOT 650,350;
130 SET COLOUR 1,255
140 DO
150 INPUT PROMPT "X,Y ":X,Y
160 IF X<0 THEN LET X=X+65536
170 IF Y<0 THEN LET Y=Y+65536
180 LET X1=MOD(X,256)
190 LET X2=INT(X/256)
200 LET Y1=MOD(Y,256)
210 LET Y2=INT(Y/256)
220 PRINT [101:PLOT$;CHR$(X1);CHR$(X2);CHR$(Y1);CHR$(Y2);
230 LOOP WHILE X<>0 OR Y<>0
```

In this example PLOT\$ is used to produce the start of the relative plotting escape sequence, X and Y are converted to LSB and MSB by lines 180-210 and the whole escape sequence is printed to the graphics screen in line 220. The semicolon at the end of line 220 is used to suppress the automatic carriage return.

As was mentioned earlier, using escape codes for relative plotting is far quicker than using turtle graphics. The last example demonstrates this fact. It draws a square, 100 units to each side, fifty times, firstly by turtle graphics then by using escape sequences. You should be able to notice the speed increase yourself.

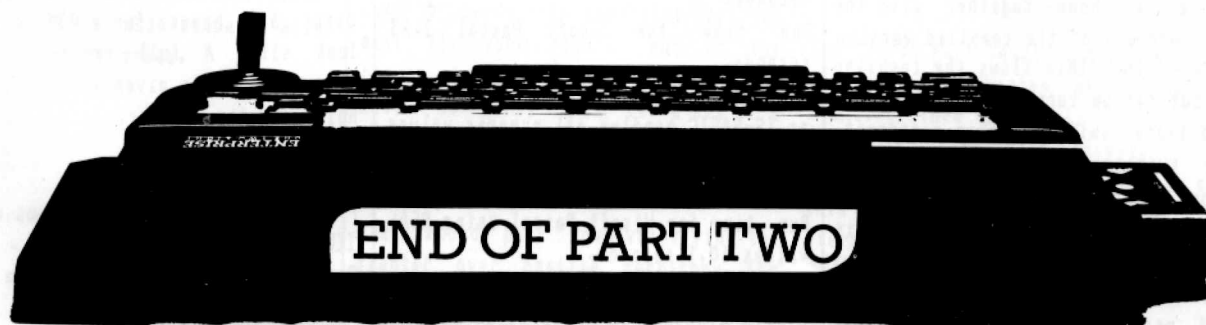
```
10 LET SQUARE$=HEX$("1B,52,64,0,0,
0,1B,52,0,0,64,0,1B,52,9C,FF,0,0,1B,
52,0,0,9C,FF,1B,73")
100 RANDOMIZE
```

```
110 GRAPHICS
120 SET PALETTE BLACK, GREEN, RED, CYAN
130 FOR N=1 TO 50
135 SET INK RND(3)+1
140 PLOT RND(1100), RND(600);
150 PLOT ANGLE 0;
160 FOR NN=1 TO 4
170 PLOT FORWARD 100, LEFT PI/2;
180 NEXT
190 SET BEAM OFF
200 NEXT
205 CLEAR GRAPHICS
210 FOR N=1 TO 50
215 SET INK RND(3)+1
220 PLOT RND(1100), RND(600);
230 PRINT [101:SQUARE$
240 NEXT
```

You should now have a good idea about what the various control codes and escape codes do. All that is left is to experiment with them yourselves and discover their advantages (and limitations). I will leave you with the short program I promised earlier to convert decimal values into hexadecimal LSB/MSB:

```
100 DO
110 INPUT PROMPT "DECIMAL VALUE:":
N
120 LET H$=WORD$(N)
130 PRINT "LSB";ORD(H$);"MSB";ORD(
H$(2:))
140 LOOP WHILE N<>0
```

**DAVE  
RACE**





Hi-soft



A question many people ask is "What is the natural progression in programming languages after BASIC?". Less informed individuals may propose machine code, pointing to its vast increase in speed. One of the main problems with machine code is ease of use. It takes a great deal of code to do even the most simple of tasks. Pascal, however, gives a large speed increase with powerful, high level structures which are easy to use. Machine code addicts are not left out though. Machine code can easily be directly embedded in Hisoft Pascal using the special `INLINE` function.

Hisoft Pascal is a 'compiled' language: that is, the program is first converted to machine code before it can be run. This gives a great increase over 'interpretative' languages like IS-BASIC, where each line of code is converted into machine code as it is found while the program is running.

The compilation time (time taken to convert Pascal into machine code) is very short, just a few seconds for even a large program. In normal compilation mode each line of the program is shown together with the memory address of the compiled version of the line. This slows the compiler down but can be turned on or off using a software switch within a comment. Other switches allow you to turn off various built in checking functions such as array boundary checking. This speeds up the program even more but makes debugging very difficult and I would recommend using this only after a program has been fully tested (some

hope!).

As a simple comparison of speeds, I wrote simple programs in IS-BASIC and Hisoft Pascal. Each of them adds together two values, 'b' and 'c', the result is then placed in 'a'. This is done a total of 32,000 times in a FOR loop.

## IS-BASIC

```
100 PROGRAM simple
110 B=123
122 C=12345
130 FOR I=1 TO 32000
140 LET a=B+C
150 NEXT
```

## Hisoft Pascal

```
PROGRAM simple;
VAR
  i,a,b,c : INTEGER;
BEGIN
  b:=123;
  c:=12345;
  FOR i:=1 TO 32000
  DO
    a:=b+c
  END.
```

Run time for IS-BASIC: 5 minutes 19 seconds.

Run time for Hisoft Pascal 2.23 seconds.

This was not a totally fair comparison as IS-BASIC handles all numeric values as REAL. Therefore I made a,b and c REALS and ran it again.

Run time for Hisoft Pascal using REAL values 10.1 seconds.

Slower, I admit but 10 seconds verses over 5 minutes! IS-BASIC still takes a pasting.

Pascal is not difficult to learn, especially if you have been making use of the advanced IS-BASIC features (wot, no GOTO's?). One of its attractive features is the control you have over variables. Pascal gives you a rich set of variable types, not just numeric and string variable types, you may also define you own variable types.

Hisoft Pascal contains a special function, EXOS, which gives the programmer access to the operating system. Pre-declared variables RA,RB, RC,RD,RE,RDE and RBC give access to the Z80 registers to pass parameters to EXOS. To make full advantage of this you need the Technical Manual (Hopefully there will be one commercially available soon - ED), although Hisoft Pascal does come with an example program (TURTLE.PAS) which contains routines for accessing some of the Enterprise's advanced graphic features. This is by no means a comprehensive library of routines, but IEUG will be printing a whole bunch of useful Pascal Procedures next issue which should give you access to just about everything that you may need. Once written, the Pascal program can be compiled and saved to tape. In this form the program can be run from tape without loading in the Pascal compiler.

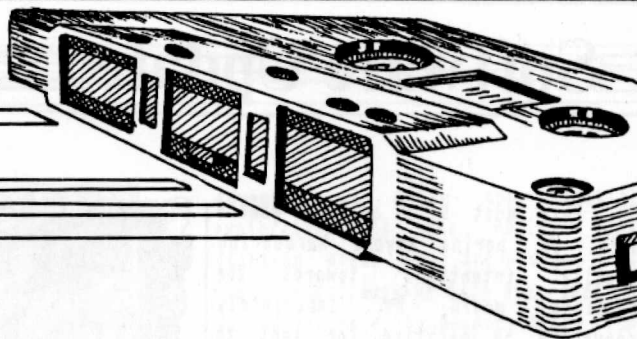
As I write, I have been given the latest version of Pascal, hopefully the compiler will be commercially available before Christmas. Hisoft Pascal will be available on tape and disc, but hopes for a ROM cartridge look slim. A full review of Hisoft Pascal will be given when we can get hold of the commercial version with manual.

P.S. Look out for some programs on the IEUG Christmas Bargain Mega Compilation Bonanza Tape written using Pascal.

**Gary Thomson**

# Software

## Update



### KEY TO RATINGS;

#### ARCADE and ANIMATED ADVENTURES

- GAME CONTENT** - Variety of actions / screens
- PLAYABILITY** - Ease of use, addictive quality
- GRAPHICS** - Quality and use of graphics related to machine
- SOUND** - Use of stereo and tune / noise originality.
- VALUE FOR MONEY** - Overall impression when compared with price.

#### ADVENTURES

- GAME CONTENT** - Design of plot / background. Puzzle ingenuity.
- PRESENTATION** - Atmosphere, graphics (if any), text / screen layout.
- INTERACTION** - Parser quality, editing facilities
- VALUE FOR MONEY** - Overall impression when compared with price.

#### PERCENTAGES

- 0 - 25 - Yuk, Bleah !
- 26 - 50 - Bad to Mediocre
- 51 - 75 - Average to Good
- 75 - 100 - Excellent to completely Brilliant

### Raid over...



Name : RAID  
 Producer : US Gold  
 Category : Arcade  
 Price : £9.95

In this strategy/arcade game you must destroy enemy missile silos to prevent missiles from landing in the good ole U.S. of A (yeeeeee haaaaaf ! Rustle them thaar steers boy!). This is achieved by flying your space fighters from the orbiting space station to the missile silos. After the silos' sites have been destroyed you can then attack the enemy defence centre. Although "the Enemy" is never mentioned by name, they are quite obviously the Russians (the defence centre being a blobby version of the Kremlin).

Raid is a Spectrum dump (copied over from a Spectrum including blocky attribute graphics on a reduced screen), though there is "stereo sound", well, stereo blips, whooshes and bangs actually. The game is split into 5 parts - in the first part you must fly your fighter out of the hanger (exciting stuff, huh? I think not). At first this is a bit of a challenge, but after a very short time it becomes annoying and tedious.

The second part involves flying the fighter over hostile territory. The instructions say that the controls for this scene are similar to the controls of a REAL JET! Wow! My advice is NEVER

let US Gold fly a jet.

The third part is an incredibly bad Invader/Galaxians type idea. You move left, right, up or down and can fire slow moving bullets. Meanwhile the excitement mounts as a lone defending plane enters stage left and ponderously advances on your fighter loosing off shots/bombs/bits of string or whatever. You must hit a coloured block in an amazingly detailed (I think not - ED) white tower, which would be quite exciting if it wasn't for the fact that you are told when you are on target - it might as well shoot the gun for you as well !

The fourth part is a sort of target shooting game with a few differences. One, the targets shoot back! Two, the targets come back to life after a short time. You control a little man who can move left or right and change the elevation of his gun/anti-tank weapon/ping pong pistol. The controls for this are too sensitive and we had great difficulty getting the same elevation twice in a row.

The fifth part involves throwing disc grenades/paper plates at a robot by bouncing them off a wall and catching them if they miss (overtones of Blockade here). We never actually saw this scene - something we will be eternally grateful for !

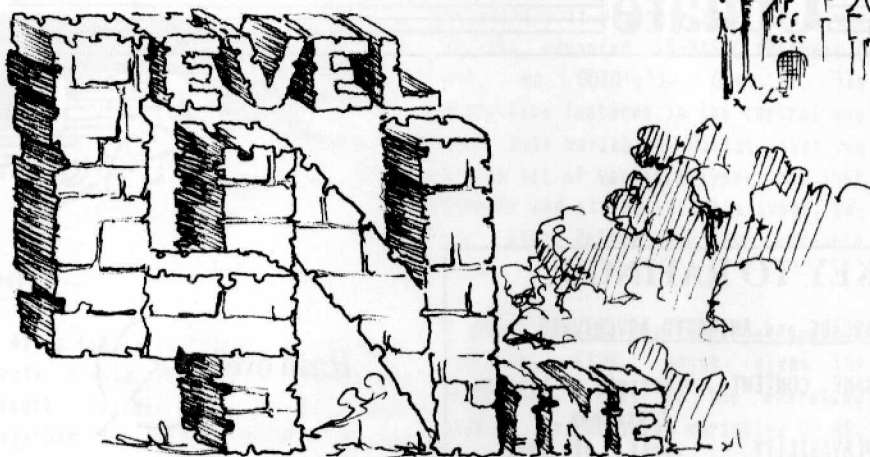
#### COMMENT:

GT. Almost as much fun as a cold bath!

# ≡Software Update≡

NB. This must be an anti-war game - it's so boring anyone harbouring hostile intentions towards the Russians would be immediately converted to pacifism (or sent to sleep for an indefinite period !).

Game Content	65%
Playability	55%
Graphics	45%
Sound	35%
Value For Money	40%



Name : LORDS OF TIME  
 Producer : Level 9 Computing  
 Category : Adventure  
 Price : £9.95

Those transdimensional villains, the Evil Timelords, have taken it into their heads to mess about with Earth's history in order to make the future very unpleasant indeed. You are made aware of their dastardly scheme via a wierd dream you have in which history seems to have gone bonkers. Your mission is to travel through nine time zones collecting a special item from each which together will destroy the despicably naughty (I would not buy a used car from these men) Timelords.

This must rank as one of the best adventures ever written, as it contains both a superb storyline and

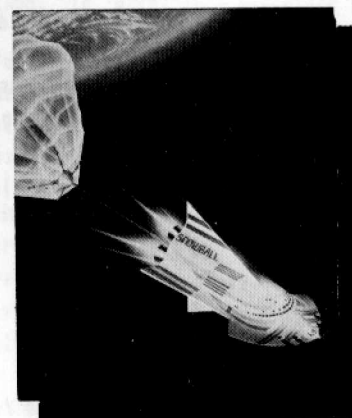
incredible atmosphere - to say nothing of the ingenuity of the puzzles ! Level 9's offbeat humour/logic is present in large quantities, thus making Lords of Time challenging and hugely enjoyable. Most of the problems can be solved fairly easily, but some remain which require a lot more thought - the player must leave no avenue unexplored nor manure heap unturned. Death never seems to be too far away in this particular adventure, so saving the game regularly is highly advisable.

## COMMENTS:

NB. I believe this to be THE BEST all round adventure I have ever played. Once started, I could not leave my keyboard until I had solved the last problem. If you are an adventure fan, then BUY IT !!!

GT. This is a game of outstanding quality. The parser is excellent, the descriptions are clear and easily visualised, and the manipulation of objects is extremely easy. One for the Christmas stocking (if you can wait that long !)

Presentation	90%
Interaction	80%
Game Content	85%
Value For Money	85%



Name : SNOWBALL  
 Producer : Level 9  
 Category : Adventure  
 Price : £9.95

In this science fiction adventure, you play the part of Kim Kimberley, a secret agent of dubious sex. Your mission is to safeguard the interstellar transport, Snowball 9. To achieve this you have been secretly placed on board in a special freezer coffin and will be awakened should anything go wrong. You begin the adventure waking inside your freezer coffin (I have often wondered what happend to the light in the fridge when I closed the door...now I know), something appears to be wrong, you must discover what it is and put it right before catastrophe strikes.



# ≡Software Update≡

The instructions/poster gives details of Kim's background as well as setting the scene for the adventure, including a Geopolitical summary for the year 2195. Very quickly you are confronted by the dreaded Nightingales, robot security guards who are not at all happy with passengers wandering about.

Unlike most other adventures, points are not gained for collecting items and placing them in a special location. Rather, points are scored by performing actions that help towards finding what is wrong and ultimately saving Snowball 9. You lose points for getting caught by the Nightingales (not a pleasant experience!) and getting killed in a variety of ways.

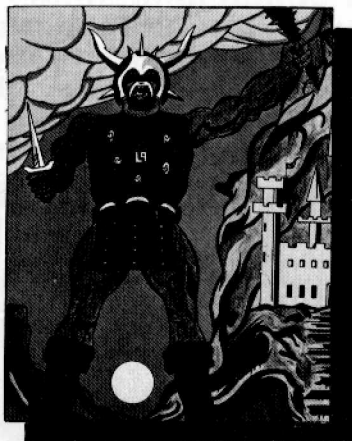
The atmosphere built by the game is very much like that of a first rate sci-fi novel. Tense in some parts, calculating in others and sprinkled with humour. The parser is good (though beware of typing an X at the start of a word!) but some of the descriptions can be a little hard to visualise in context.

## COMMENT

GT. A classic adventure and the best sci-fi adventure I've played (though 2195 technology does seem to involve an enormous amount of button pushing!)  
• A definite favourite of mine.

NB. A very atmospheric adventure, containing loads of very logical problems which require a scientific approach (no "zap dragon with magic toothbrush" stuff here!). Sci-fi fans will love it.

Presentation	85%
Interaction	80%
Game Content	85%
Value For Money	85%



Name : ADVENTURE QUEST  
Producer : Level 9 Computing  
Category : Adventure  
Price : £9.95

This is the second in Level 9's "Middle Earth" trilogy of adventures, and the sequel to "Colossal Adventure". It is set in the times long after Colossal, absolutely nothing having happened in the intervening period. However, just before terminal boredom threatens to set in, the Demon Lord Agaliarept livens things up a bit by stomping on the harvest and filling the place with orcs who spend their time headbutting the yokels. Your quest is to find the four Stones of the Elements which will enable you to enter Agaliarept's tower, and then use have to find) to give him the kicking he deserves.

We found this to be an extremely tough

adventure - after some initial exploration of the valley (the starting area) you are plunged into the hardest maze we have ever seen in an adventure - The Desert. Apart from containing loads of identical-looking locations, it also features a time limit (you will die of thirst if you get lost) and a marauding Sandworm which follows you around and will kill you if you let it get too close. You can lose loads of lives just trying to discover the routes through the maze to the other locations in the game, so using the saved game facility is an absolute must (even with the desert well behind you, the game remains wickedly difficult!) Hardened adventurers will find this a rewarding challenge - this is definitely not one for the novice.

## COMMENTS :

NB. I found the storyline and atmosphere generated to be first rate, but the logical grouping of associated locations usually present in Level 9 offerings seems to be lacking here, making the exploration of the game a very heavy task.

GT. Just a Leeeeetle bit hard this one! Definitely for adventure masochists everywhere.

Presentation	80%
Interaction	60%
Game Content	70%
Value For Money	70%

## Caverns of carnage

Name : DEVIL'S LAIR  
Producer : Loricciels  
Category : Arcade  
Price : £7.95

One stormy night, on the way home from the chip shop, you take a wrong turning and suddenly find yourself trapped in the mysterious and not at all nice Devil's Lair - a labyrinth of

sixteen connected caverns full (literally!) of traps, each cavern containing a key and a chest - every chest has to be opened in order to reveal the final exit. You also have to keep a close eye on your energy level - it decreases rapidly, and you have to constantly find and consume food and drink (present in the form of Big Macs and glasses of wine and only in

# Software Update

extremely small quantities) to keep it from reaching zero (which spells death, sucker). You also die by colliding with the multitude of traps, which include flamethrowers, electric plates, landmines and iron spikes.

This is another platform game, in the same vein as "Jack's House of Cards" (see Issue 2) although visually it is far superior. The man is refreshingly easy to control, leaping nimbly from platform to platform and then into the middle of a disintegrator beam (which is appallingly easy to do). There are a variety of ways in which you can die, each of which is depicted in beautiful pastel graphics (its the only way to go...). Control is by joystick for left and right, with the space bar to jump.

To say this game is difficult would be an understatement of epic proportions - it is MEAN. Playing the game ourselves, we have only seen two of

the possible sixteen screens - and neither of us is bad at platform games ! However, once mastered, the elegance of the game unfolds. There are a large number of slides, the departure from which requires perfect timing if you

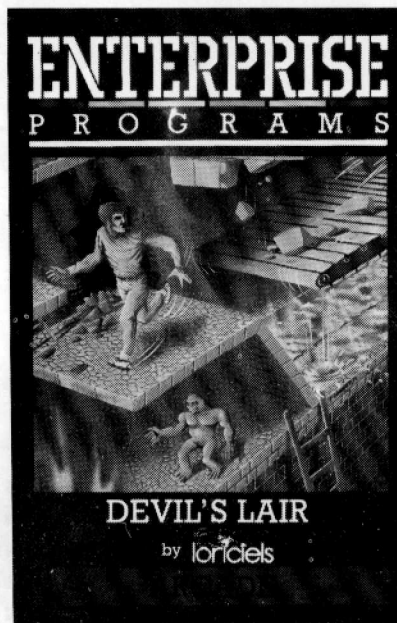
don't want to end up on the end of a spike! There is also a lift, but we've only seen that in the demo and so cannot comment on ease of use....

## COMMENTS:

NB. This must rate as the most difficult platform game in the whole universe - after about three hours constant play I'd still only seen TWO of the screens ! Not a game you will lose interest in for a VERY LONG TIME.

GT. I challenge anyone to disprove my claim that it is impossible to complete (that is, open the chest on) more than about 3 screens of this game.

Game Content	80%
Playability	65%
Graphics	75%
Sound	40%
Value For Money	60%



## Unrivalled

Name : SORCERY  
 Producer : Virgin  
 Category : Arcade  
 Price : £7.95

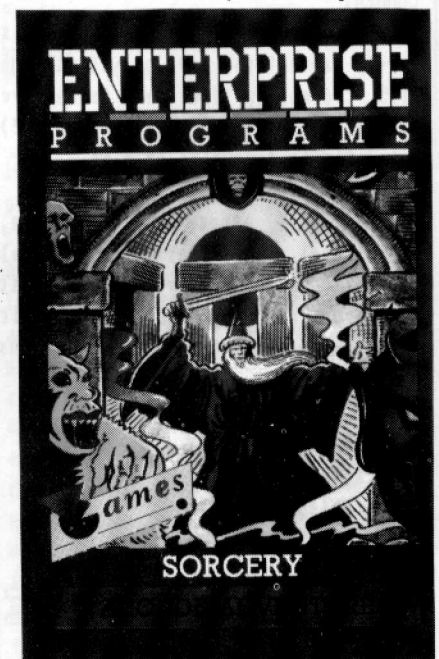
This is Ancient Britain, cloaked in the swirling mists of the Middle Ages. The evil Necromancer has imprisoned all but one of the nine goodly sorcerors in order to further his evil schemes and will soon kill them, thus making him undisputed Overlord and forcing the land to submit to his terrible rule. You play the part of the Last Free Sorceror, and you must release all your colleagues in the fleeting minutes you have left before the nasty Necromancer zaps 'em into oblivion.

The sorceror flies from screen to screen (there are 40 altogether) by use of the joystick - there is four-

way movement, and if the joystick is released the sorceror will float slowly down to earth. Objects are picked up (or used if already held) by means of the space bar. The screens are the most beautifully illustrated we've yet seen on the Enterprise, with the impression of solid three dimensional figures portrayed by clever use of shading and colour. Game play is fast, furious and irresistibly addictive as you strive to discover what various objects' functions are, where the sorcerors are imprisoned and how to release them.

In addition to the time limit, you have to contend with quite a hefty smattering of nasties (two inhabit each screen) who are all out to drain your energy. Energy is displayed as a percentage - if this reaches zero then you snuff it ! You can also die by

coming into contact with any running water - evidently swimming wasn't



## Software Update

considered an important wizardly discipline in those days ! There are a number of cauldrons scattered about... but you'll have to play the game to find out what they do !

All in all, "Sorcery" is a superbly implemented and hugely enjoyable game - at the time we first saw it (the PCW Show), it totally knocked the spots

off any other piece of Enterprise software available.

### COMMENTS

NB. Forgive the pun, but this game is MAGIC ! It's superb fun to play (even if I do keep falling in the water !) and is a must for your games collection. Buy it !

GT. A colourful and amusing game filled with fast action and puzzles. Definitely one of the best games available for the Enterprise.

Game Content	80%
Playability	80%
Graphics	85%
Sound	55%
Value For Money	80%

### Perilous potholing

Name : THE ABYSS  
Producer : AI Products  
Category : Arcade  
Price : £7.95

After the inevitable nuclear war (cynic ! - Ed.) the surface of the Earth was made uninhabitable. However, humanity still flourished deep below the surface due to an artificial environment they had created controlled by the RULER supercomputer (RULER is the Result of Ultimate Learning and Educational Refinement). I wonder if the people who reached this stage of ultimate learning were the same people who bombed the Earth ? Still, after a while RULER threw a major wobbler and wiped out most of the population, turning the undersurface world (now called "The Abyss") into a massive series of traps in order to kill the survivors. However, the last remaining bastion of humanity has made one final effort to survive - a sphere has been built which is capable of travelling through the dark vaults carrying one passenger - you. Your mission is to find and destroy RULER... however there is a long way to go.

The overriding aim of this game is survival. There are over 1,000 chambers which together form "The Abyss", each filled with homicidal robots (need I add that they're all programmed to kill you) and traps to negotiate. Some chambers are

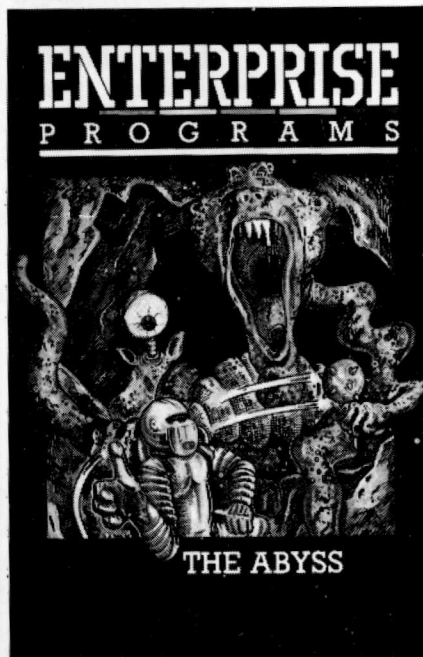
impassable until certain actions are performed - you must discover what is required, always avoiding the killer robots, photon thrusters and other assorted nastiness. Your sphere can operate in two modes - armed and defenceless (defenceless mode is better for negotiating the traps). You can alternate between these modes by use of "Swop" units which can be found scattered around in various chambers. Your "psyche", or energy level starts at the grand total of 888, but is soon reduced by colliding with the robots. It can be increased either by entering new rooms or by activating a "Psyche" unit - beware of over-energising though...

Control of the sphere is by internal joystick with the space bar to fire (when in armed mode). When in a room containing an object, a "Swop" unit or a "Psyche" unit, pressing the "I" key will do the relevant thing - pick up the object, increase your psyche (energy) or swop modes. If you pick up a bomb, it can be dropped by pressing the "U" key (but make sure you're not too close to the ground !).

The first feature of this game which immediately impressed us was the excellent music which plays throughout the game - yet another example of good use of the sound facilities available on the Enterprise. The graphics are fast and smooth, and although a bit gaudy are well up to the standard set by the top micro arcade games. We didn't get very far, but most chambers seemed fairly easy to negotiate with the marked exception of chambers containing photon thrusters. These are devilishly difficult, requiring precise timing (and a large degree of luck, considering how many of these chambers there must be between the start and the RULER computer). If you are an arcade fan, "The Abyss" is definitely a game to look out for.

### COMMENTS

NB. I was too busy bopping to the music to be able to get very far ! It seems a bit rough that you die completely upon hitting a photon thruster beam. Overall very good





# Software Update

GT. Killing the little alien robots appears to be rather pointless as another will immediately take its place! Otherwise it could be a great zapping game, as it is, it relies on fast reflexes and accurate positioning of your craft to get past the photon thrusters and other obstacles that bar your way. I found it fun and very

addictive, especially the music, even if it did drive some other members of the household mad (sorry Tim!).

Game Content	60%
Playability	65%
Graphics	70%
Sound	75%
Value For Money	70%

Enterprise 'Starter Software' release ! "Eddie goes Adventuring" ...hmm...could be worth money to some crackpot...

Presentation	10%
Interaction	5%
Game Content	15%
Value For Money	25%

## Bundle of bodes

Name : ADVENTURE PACK  
Producer : Microdeal  
Category : Adventure ???  
Price : £6.95

This package contains not one but THREE text adventure games - Williamsburg, Ultimate and Castle Dracula. Superb value for £6.95 you might think... unfortunately not ! These programs are the pits, man ! Written in jolly old IS-BASIC and converted from the original Dragon 32 classics (ho ho !) they seem to have acquired some classic bugs and spelling mistakes along the way.

In Williamsburg, someone has hidden the fabled Golden Horseshoe somewhere in the colonial city. Your job is not only to find the treasure but also to find out which words the parser will actually recognise ! Also, adventurers with any morals will find it impossible to complete this adventure as you are required to blow away defenceless inhabitants with a cannon in order to win, to say nothing of stealing almost anything you can find that will move !!! The puzzles in this game are so obvious it's untrue, the problem really being expressing the action you wish to perform in a manner the program will understand. In its defence, the program was written with 10 year olds in mind but the puzzles insult even their intelligence while the useless parser would make it nigh impossible for them to do much at all.

Castle Dracula is very similar in presentation to Williamsburg and suffers the same dreaded parser palsy. You are cast as Baron Von Helsing, who wakes up to find that his wife has done a runner and shackled up with old Draccie. This is another adventure in which you have to bump off either the local clergy or the shopkeeper in order to win - not really an example for ten year olds, is it ?

Ultimate differs slightly in that there aren't really any puzzles to solve (good adventure, eh kids ??). You start off in a market with 250 strength points and £300 - you can then buy various pieces of equipment, some of which will help you to bash up the nasties (such as the terrible "Bndit" - spelling mistake quoted from the game !) or allow you to enter otherwise inaccessible rooms. The nasties knock strength points off you unless you use the correct item against them - however once you get into a combat you are prompted for 'Which item ?' and are unable to do an inventory to find out which items you have ! I think I've said enough ...

### COMMENTS

NB. Blehhhhh !!! These are the worst excuses for adventure games I've ever seen. Take my advice, spend an extra three quid and get a decent (Level 9) adventure.

GT. If I hadn't seen otherwise, I could have sworn this was an

Neil Blaber  
Gary Thomson

## COMMENT

As we hoped, the quality of software has improved drastically (with a few exceptions) in recent months. Even more good news is that there will be no more Spectrum dumps financed by Entersoft. Programs in future will have to be at least Commodore and Amstrad quality before being financed. We see this as a good move as the comparisons with the Spectrum can only do this computer harm. It is not 'a good Speccy emulator', it is a machine in its own right, having much more to offer than any of its rivals. Enterprise specific software is still very thin on the ground (transparent in fact), but this should change as software houses learn more about the machine.

Recently we have had difficulty in obtaining production copies of Enterprise products for review purposes. Although we can see the problems associated with loaning large numbers of products to various outlets (press, distributors etc.), we feel somewhat annoyed that the User Group seems to have been grouped alongside these and is thus getting the 'cold shoulder' from Enterprise. After all, we do represent their customers !

It seems that the policy of giving us the two-week loan of new products to review no longer exists, thus rendering it impossible for us to perform this function (it will take longer than a two hour session in the Enterprise offices to properly review the Speakeasy, Enterprise !).

Of the Enterprise's many outstanding features, graphics are bound to be at the top of most peoples' lists. Screen coordinates, however, can pose some problems.

The Enterprise can support screen resolutions varying from 672 by 245 down to 2 by 9 (from Basic that is). The way screen coordinates are defined in IS-Basic is dependent on the size of the screen being used and not upon the number of pixels across and down. This means it is very simple to change the colour resolution of a picture without having to change any of the screen coordinates. This can make it difficult to identify which coordinates are associated with different pixels (for example, several screen coordinates may refer to the same pixel).

All character spaces contain 9 real vertical pixels (except in interlace mode when you have 18). Screen Y coordinates are 36 (9x4) high which gives a ratio of one vertical pixel to four screen Y coordinates.

The horizontal characters spaces vary in pixel content depending on the resolution and colour mode, but if you remember that each increase in colour halves the pixel resolution (2 to 4, 4 to 16 and 16 to 256), you can work out the pixels per screen for any colour resolution combination. In high resolution 2 colour mode there are 16 pixels and in low resolution two colour mode there are 8 pixels across. In order to simplify this, here are some formulas to work out the pixel and coordinate resolution, using the screen size in character spaces together with the resolution and colour mode.

## HIGH RESOLUTION PIXELS WIDE

CX = CHARACTERS WIDE  
CY = CHARACTERS HIGH

## Co-ordinates Vs PIXELS

2 COLOUR MODE = CX\*16  
4 COLOUR MODE = CX\*8  
16 COLOUR MODE = CX\*4  
256 COLOUR MODE = CX\*2  
(Low resolution have half this number of pixels)

## COORDINATES RESOLUTION WIDE

COORDINATES WIDE = CX\*32 (for all resolutions & modes)

## PIXELS HIGH

PIXELS HIGH = CY\*9 NON INTERLACE  
PIXELS HIGH = CY\*18 INTERLACE

## COORDINATE RESOLUTION HIGH

PIXELS HIGH = CY\*36

Below is a program which will calculate the number of pixels and coordinates for any size video page.

```
100 PROGRAM EXAMPLE
105 CLEAR TEXT
107 PRINT
108 PRINT "Type in the details of
    the screen that you want (use
    values from the machine options)
    :"
109 PRINT
110 INPUT PROMPT "Characters wide: "
    :CHAR_X
120 INPUT PROMPT "Characters High: "
    :CHAR_Y
130 INPUT PROMPT "Video Mode: ":VID_
    MODE
140 INPUT PROMPT "Video Colour: ":
    VID_COL
145 PRINT
170 SELECT VID_COL
180 CASE 0
190 LET PIXEL_X=CHAR_X*16
200 CASE 1
210 LET PIXEL_X=CHAR_X*8
220 CASE 2
230 LET PIXEL_X=CHAR_X*4
240 CASE 3
250 LET PIXEL_X=CHAR_X*2
```

```
270 END SELECT
290 SELECT VID_MODE
300 CASE 0,2
310 PRINT "These are text modes!"
320 CASE 1
340 CASE 5
350 LET PIXEL_X=PIXEL_X DIV 2
360 CASE 15
370 LET PIXEL_X=CHAR_X*8
380 END SELECT
400 LET PIXEL_Y=CHAR_Y*9
420 LET COORD_X=CHAR_X*32
430 LET COORD_Y=CHAR_Y*36
450 PRINT "Horizontal pixels (X):";
    PIXEL_X
460 PRINT "Vertical pixels (Y):";
    PIXEL_Y
470 PRINT
480 PRINT "Screen coordinates:"
490 PRINT " X: 0 -";COORD_X-1
500 PRINT " Y: 0 -";COORD_Y-1
```

## HORIZONTAL COORDINATE STEPS

High Resolution:

2 COLOUR = 2  
4 COLOUR = 4  
16 COLOUR = 8  
256 COLOUR = 16

Low Resolution:

2 COLOUR = 4  
4 COLOUR = 8  
16 COLOUR = 16  
256 COLOUR = 32

## VERTICAL COORDINATE STEPS

All resolution & colour modes = 4  
All resolution & colour modes  
(INTERLACE) = 2

NOTE. The numbering system starts from 0 - therefore although the maximum number of coordinate positions is 1280, the highest coordinate is only 1279.

The ATTRIBUTE screen uses the same formula as the high resolution 4-colour mode.

TIM BOX



One of the Enterprise computer's main selling points must be its superior graphics capabilities, especially in comparison with other 8 bit microcomputers. It manages to achieve considerable flexibility in this area by using a custom designed graphics chip 'NICK'. It is the aim of this article to introduce the reader to this chip, and show ways of manipulating the display which are simply not possible using standard IS BASIC commands.

The actual display that is generated by NICK depends upon two areas of memory. The first area is where a table of values that determine such things as margins, colours etc. is located. This table is known as the 'Line Parameter Table'. The second area of memory is where the screen data is stored - characters, coloured pixels etc, the 'Information Area'.

The Line Parameter Table, or LPT, consists of groups of 16 bytes that have the following significance.

BYTE0: The number here represents how many pixel lines (scanlines) are to be affected by the following 15 bytes. The actual number of scanlines is given in a two's complement form,

but bit 7 of the byte being a magnitude bit, not a sign bit!

E.g. 247 here would represent 9 pixel lines (the usual setting).

BYTE1: This is the modebyte and defines the video mode of the scanlines.

BYTE2: Left margin byte. The bottom 6 bits define the left hand margin for the lines. Usually these bits are set to produce 11.

BYTE3: Right margin. As BYTE2 but for the right hand margin (usually set to 51).

BYTE4, BYTE5: Define where in video memory the data for the scanlines is, i.e. the information area for the lines.

BYTE6, BYTE7: Used to point to the character font for the text modes, or a pointer to pixel information when using the attribute mode.

BYTE8 to BYTE15: Define palette colours 0 to 7 for the scanlines.

For the purposes of this article I shall not make any use of BYTE1 to BYTE3, or BYTE6 and BYTE7.

The LPT has at default 34 groups of these 16 bytes, only 28 may be used for display purposes. The other 6 groups describe blank lines that define the border and end of the video frame. It should be noted here that the total number of scanlines is always 312, a number greater or less than this will cause the display to become unsteady (an exception to this is when interlace is being used).

To manipulate the display, we need to know where the LPT is stored in memory. To find this out we need to have a basic understanding of the internal architecture of the Enterprise. The Z-80 microprocessor at the heart of the computer can only address 64K bytes, so how can the Enterprise address 4M bytes? The

answer to this is that the computer uses 256 blocks, or segments, of 16K, with the Z-80 using any 4 segments at a time (internal memory decoding being achieved by another custom chip 'DAVE').

The NICK chip can only use segments 252 to 255, so called video memory. (this is why the Enterprise 64 is slower than the Enterprise 128, accesses to these segments are slower due to the interaction of NICK with the Z-80). Thus all graphics data, i.e. the LPT and information area must reside in these segments.

Each segment has 16K of memory, thus actual memory can be described by a segment number (0 to 255), and a segment memory address (0 to 16K). A rather special segment is number 255, the so called system segment. In this 16K block reside several 'system variables'. At address 255,16372 and 255,16373 is one such variable called LP\_POINTER. This contains the address of the start of the LPT in segment 255. Thus by using

```
100 LET LPT_ADDR=REM(SPEEK(255,16372)+
256*SPEEK(255,16373),16384)
```

LPT\_ADDR will equal the address of the first byte of the LPT. We now have enough information to start experimenting with the display.

LISTING 1 is a demonstration of how to move screen memory about. Run the program and press 'enter' when the question mark appears. You will see line 5 on the screen replaced with line 1!! The program uses a text screen, but the same would apply if we had used a graphics screen.

LISTING1:

```
100 PRINT AT 1,15:"HELLO THERE"
110 PRINT AT 5,15:"I'M LINE 5"
```



# Advanced Programming

```

120 LET LPT_ADDR=REM(SPEEK(255,16372)
+256*SPEEK(255,16373),16384)
130 INPUT A$
140 LET D1=SPEEK(255,LPT_ADDR+16+4)
150 LET D2=SPEEK(255,LPT_ADDR+16+5)
160 SPOKE 255,LPT_ADDR+5*16+4,D1
170 SPOKE 255,LPT_ADDR+5*16+5,D2

```

Now try LISTING 2. Here a graphics screen is used to demonstrate how we can change the colour of the inks on separate lines. So although we are using a 4 colour mode, it is possible to have 60 colours on screen at once. Although at the moment the inks can be different only between character lines, we shall see how we can overcome this in the next listing.

```

100 GRAPHICS HIRES 4
110 FOR T=1 TO 120
120 SET INK RND(3)+1
130 PLOT RND(1279),RND(719);
140 NEXT T
150 LET LPT_ADDR=REM(SPEEK(255,
16372)+256*SPEEK(255,16373),16384)
160 DO
170 FOR T=1 TO 20
180 SPOKE 255,LPT_ADDR+T*16+9,
RND(255)
190 SPOKE 255,LPT_ADDR+T*16+10,
RND(255)
200 SPOKE 255,LPT_ADDR+T*16+11,
RND(255)
210 NEXT T
220 LOOP

```

We know that BYTE0 refers to the number of scanlines to be affected by BYTE1 to BYTE15. Thus if we alter the value of BYTE0, but ensure that the total number of scanlines is 312, we will be able to introduce colour differences between pixel lines, not only character lines as before.

Using this method I have managed to produce 11 background colours on a 4 colour display (i.e. 3 foreground colours may still be used) to create the effect of a sunset. A very important part of the program occurs between lines 250 and 320. This part of the program ensures that BYTE4 and BYTE5 of each group of 16 bytes in the LPT are pointing to the correct area of video memory. This is achieved as follows:-

Take the first group of 16

bytes in the LPT that refer to the graphics screen, i.e. LPT\_ADDR+16 (LPT\_ADDR refers to the status line). Then BYTE4, BYTE5 point to the first byte in video memory of the graphics screen, call this ADDR (graphics information is usually held in a continuous block of memory). Each scanline on a default hires graphics screen corresponds to 80 bytes of data. Thus to display the information described by the 16 byte area in the LPT requires 80\*number of scanlines (BYTE0). Hence for the next group of 16 bytes in the LPT, BYTE4, BYTE5 must point to ADDR+80\*number of scanlines of previous group. This process must be repeated for all groups of 16 bytes that describe the graphics screen.

LISTING3:

```

100 GRAPHICS HIRES 4
110 SET COLOUR 1,RED
120 RANDOMIZE
130 LET LPT_ADDR=REM(SPEEK(255,
16372)+256*SPEEK(255,16373),16384)
140 !
150 ! *** Change number of scanlines
to be affected by a ***
160 ! *** particular background
colour ***
170 !
180 FOR NUM=1 TO 10
190 READ NUM_LINES
200 SPOKE 255,LPT_ADDR+NUM*16,256-
NUM=LINES
210 NEXT NUM
220 !
230 ! *** Ensure that BYTE4,BYTE5
point to correct memory area ***
240 !
250 RESTORE 480
260 FOR NUM=2 TO 20
270 LET ADDR=SPEEK(255,LPT_ADDR+(
NUM-1)*16+4)+256*SPEEK(255,LPT_
ADDR+(NUM-1)*16+5)
280 READ NUM_LINES
290 LET NEW_ADDR=ADDR+NUM_LINES*80
300 SPOKE 255,LPT_ADDR+NUM*16+4,
REM(NEW_ADDR,256)
310 SPOKE 255,LPT_ADDR+NUM*16+5,
INT(NEW_ADDR/256)
320 NEXT NUM
330 !
340 ! *** Run through colours to
show sunset effect ***
350 !
360 CALL MOUNTAINS
370 FOR J=1 TO 7
380 FOR NUM=1 TO 10

```

```

390 READ COLOUR
400 SPOKE 255,LPT_ADDR+NUM*16+8,
COLOUR
410 NEXT NUM
420 WAIT 1
430 NEXT J
440 END
450 !
460 ! *** Number of scanlines
affected by particular colour ***
470 !
480 DATA 22,17,13,11,9,6,5,3,2,1,9,
9,9,9,9,9,9,9
490 !
500 ! *** Colours to be used as
background colours ***
510 !
520 DATA 72,1,65,9,73,201,89,217,75,
255
530 DATA 8,72,1,65,9,73,201,89,217,
75
540 DATA 64,8,72,1,65,9,73,201,89,
217
550 DATA 0,64,8,72,1,65,9,73,201,89
560 DATA 0,0,64,8,72,1,65,9,73,201
570 DATA 0,0,0,64,8,72,1,65,9,73
580 DATA 0,0,0,0,64,8,72,1,65,9
590 !
600 ! *** Draw some 'mountains',
shows that standard plot works
***
610 ! *** Note,do not use any !!
colour changes unless via a ***
620 ! *** similar routine as lines
720 to 740 ***
630 !
640 DEF MOUNTAINS
650 SET INK 2
660 FOR T=0 TO 1279 STEP 30
670 PLOT T,RND(400)+260;
680 NEXT T
690 PLOT 1279,RND(400)+260
700 PLOT 500,200,
710 PLOT PAINT
720 FOR NUM=1 TO 20
730 SPOKE 255,LPT_ADDR+NUM*16+
10,0
740 NEXT NUM
750 END DEF

```

We have seen that various effects may be created by manipulating the LPT, and even more effects are hinted at. For example, instead of using the plot command, you could poke data directly to the screen. Horizontal pixel scrolls may be induced (adjust the values of all BYTE4, BYTE5 pairs) etc. Experiment with the display, and write in to PRIVATE ENTERPRISE with your discoveries.

Peter Walton

# Home Produce

The following program allows experimentation with envelopes with the minimum of fuss. The operator first sets the volume pattern of the envelope using the joystick to draw with (the cursor moves in increments of ten units if the space bar is held down at the same time). When a phase is completed press the "N" key - if the volume part of the envelope is finished press "F".

The program will then move on to allow the pitch change to be set for each phase of the envelope; again when the pitch for any phase is correct press "

N" to move on to the next phase. The program will automatically move on when the pitch for the last phase has been defined.

The user will then be given the option of playing the envelope he has just drawn, designing a new envelope or redefining the old one.

If the user chooses to play the envelope, the initial pitch and duration of the sound will have to be given, as well as the value of the units which define pitch changes. There is also an option to print out the phases of the envelope as they would appear in an envelope command.

NOTE: The units of duration are "ticks", where 50 ticks = 1 second. Pitch definition is in semitones, with 37 being equivalent to middle C.

The only lines which may cause some confusion are 670 to 700 which actually set up the envelope by sending an escape sequence to the sound driver. This method is necessary due to line length limits within IS-Basic. The sequence takes the form:

```
esc E [1] [2] [3] [4] [5] [6] [7]
```

Where [1] is the envelope number 0-254

[2] is the total number of phases in the envelope  
1-21

[3] is the number of phases before the first release phase. This should be set to 254 if there are to be no release phases.

[4] is the pitch change. A signed 16-bit number between -32768 and 32767, this represents units of 1/512 semitones.

[5] is the left volume change from -63 to 63.

[6] is the right volume change.

[7] is the phase duration 1 to 255.

Obviously [4] to [7] must be repeated as many times as there are phases to the envelope. Another escape sequence which may be of interest allows a sound to be produced, and takes the form:

```
esc S [1] [2] [3] [4] [5] [6] [7] [8]
```

Where [1] is the envelope number to be used. 255 represents the built-in envelope, producing constant pitch and volume.

[2] is the initial pitch, 0-65535, in 1/512 semitones.

[3] is the overall left volume, 0-255.

[4] is the overall right volume.

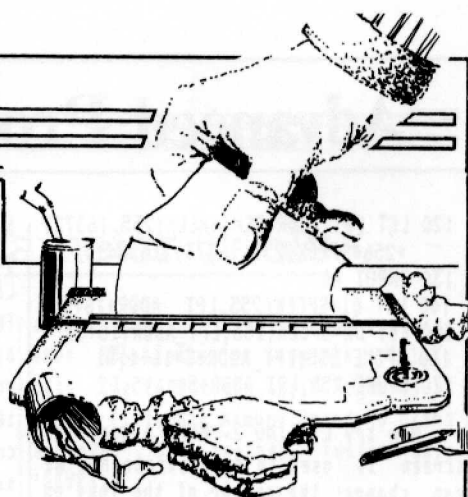
[5] is the sound style, 0-255.

[6] is the sound source, 0-3.

[7] is the duration, 0-65535, given in 1/50 seconds.

[8] is a flags byte. The first 2 bits show the SYNC value, and the last bit is set to allow the sound to override any other sounds in the sound queue. All other bits should be reset to 0.

```
100 PROGRAM "ENVELOPE_GENERATOR"
110 !
120 ! ENVELOPE GENERATOR
130 ! (c) D.M.RACE
150 !
160 SET SOUND BUFFER 21
```



# Home Produce

```
170 SET KEY CLICK OFF
180 STRING DUMMY$
190 NUMERIC P(1 TO 21),V(1 TO 21),D(1 TO 21),GRAPH(1 TO 3,0 TO 21)
200 LET GRAPH(3,0)=96:LET GRAPH(1,0)=105
210 !
220 ! MAIN BODY OF PROGRAM
230 !
240 DO
250 CALL DRAW
260 LET XX,X=96:LET YY,Y=105:LET NN=21
270 CALL DEFINE(0)
280 DO
290 CLEAR TEXT
300 PRINT AT 1,1:"(P)lay envelope"
310 PRINT AT 2,1:"(C)hange envelope"
320 PRINT AT 3,1:"(D)efine new envelope"
330 LOOK £105:DUMMY
340 LET DUMMY$=UCASE$(CHR$(DUMMY))
350 SELECT CASE DUMMY$
360 CASE "P"
370 CALL PLAY
380 CASE "C"
390 CALL DEFINE(-1)
400 CASE "D"
420 CASE ELSE
430 END SELECT
440 LOOP UNTIL DUMMY$="D"
450 LOOP
460 !
470 ! PLAYS ENVELOPE
480 !
490 DEF PLAY
500 CLEAR TEXT
510 INPUT PROMPT "Initial Pitch: ":PIT
520 INPUT PROMPT "Duration (Ticks): ":DUR
530 INPUT PROMPT "Pitch Change Units: ":P_CH
540 LET V(1)=(GRAPH(1,1)-105)/4
550 LET P(1)=(GRAPH(2,1)-411)*32
560 LET D(1)=(GRAPH(3,1)-96)*(DUR/(GRAPH(3,NN)-96))
570 FOR N=2 TO NN
580 LET V(N)=(GRAPH(1,N)-GRAPH(1,N-1))/4
590 LET P(N)=(GRAPH(2,N)-GRAPH(2,N-1))*32*P_CH
600 LET D(N)=(GRAPH(3,N)-GRAPH(3,N-1))*(DUR/(GRAPH(3,NN)-96))
610 NEXT
620 FOR N=1 TO NN
630 LET D(N)=CEIL(D(N))
640 NEXT
650 CLEAR SOUND
660 CLEAR ENVELOPE
663 !
664 ! THE FOLLOWING LINES DEFINE
665 ! AN ENVELOPE BY PRINTING TO
666 ! THE SOUND CHANNEL.
667 !
670 PRINT £103:HEX$("1B,45,1")&CHR$(NN)&CHR$(255);
680 FOR N=1 TO NN
690 PRINT £103:WORD$(P(N)) WORD$(V(N))(1) WORD$(V(N))(1) WORD$(D(N));
700 NEXT
710 SOUND DURATION DUR,ENVELOPE 1,PITCH PIT
```



# ≡Home Produce≡

```

720 CLEAR TEXT
730 PRINT AT 1,1:"DO YOU WANT A LISTING? "
740 LOOK £105:DUMMY
750 LET DUMMY$=UCASE$(CHR$(DUMMY))
760 IF DUMMY$="Y" THEN CALL LIST_ENV
770 END DEF
780 !
790 ! DEFINES ENVELOPE
800 ! CHANGE=0 FOR NEW ENVELOPE
810 !      =-1 TO REDIFINE OLD ONE
820 !
830 DEF DEFINE(CHANGE)
840 CLEAR TEXT
850 SET INK 3+CHANGE
860 LET X_POS=96:LET Y_POS=105
870 PRINT AT 1,1:"Total Duration="
880 PRINT AT 2,1:"Phase Duration="
890 PRINT AT 3,1:"      Volume="
900 FOR N=1 TO NN
910   IF CHANGE THEN
920     LET X,XX=GRAPH(3,N):LET Y,YY=GRAPH(1,N)
930     PLOT X_POS,Y_POS;XX,YY
940   END IF
950   CALL PLOT_VOL
960   IF X_POS=1264 OR UCASE$(DUMMY$)="F" THEN LET NN=N:LET N=21
970 NEXT
980 CLEAR TEXT
990 LET X_POS=96:LET Y_POS,Y,YY,GRAPH(2,0)=411
1000 SET INK 2-CHANGE
1010 PRINT AT 1,1:"Pitch Change Overall="
1020 PRINT AT 2,1:"Pitch Change This Phase="
1030 FOR N=1 TO NN
1040   LET X,XX=GRAPH(3,N)
1050   IF CHANGE THEN LET Y,YY=GRAPH(2,N)
1060   CALL PLOT PIT
1070 NEXT
1074 !
1075 ! REDRAWS ENVELOPE IF OLD ONE
1076 ! HAS BEEN REDEFINED.
1078 !
1080 IF CHANGE THEN
1090   CALL DRAW
1100   SET LINE MODE 0
1110   FOR C=1 TO 2
1120     SET INK 4-C
1130     FOR CC=1 TO NN
1140       PLOT GRAPH(3,CC-1),GRAPH(C,CC-1);GRAPH(3,CC),GRAPH(C,CC)
1150     SET LINE MODE 3
1160   NEXT
1170 NEXT
1180 END IF
1190 END DEF
1200 !
1210 ! PLOTS VOLUME PART OF ENVELOPE
1220 !
1230 DEF PLOT_VOL
1240 LET DUMMY$=""
1250 DO UNTIL XX>X_POS AND DUMMY$="F"
1260   IF JOY(0) BAND 16 THEN

```

# Home Produce

```

1270     LET M=10
1280     ELSE
1290     LET M=1
1300     END IF
1310     LET XX=XX+M*4*((JOY(0) BAND 3)=2)-((JOY(0) BAND 3)=1))
1320     LET YY=YY+M*4*((JOY(0) BAND 12)=4)-((JOY(0) BAND 12)=8))
1330     IF XX<X_POS THEN LET XX=X_POS
1340     IF XX>1264 THEN LET XX=1264
1350     IF YY<105 THEN LET YY=105
1360     IF YY>357 THEN LET YY=357
1370     PLOT X_POS,Y_POS;X,Y
1380     PLOT X_POS,Y_POS;XX,YY
1390     PRINT AT 1,16:(XX-96)/4
1400     PRINT AT 2,16:(XX-X_POS)/4
1410     PRINT AT 3,16:(YY-105)/4
1420     LET X=XX:LET Y=YY
1430     LET DUMMY$=INKEY$
1435     IF DUMMY$<>" " THEN LET DUMMY$=UCASE$(DUMMY$)
1440     LOOP UNTIL XX>X_POS AND DUMMY$="N"
1450     PING
1460     SET LINE MODE 0
1470     PLOT X_POS,Y_POS;XX,YY
1480     SET LINE MODE 3
1490     LET X_POS=XX:LET Y_POS=YY
1500     LET GRAPH(1,N)=Y_POS:LET GRAPH(3,N)=X_POS
1510 END DEF
1520 !
1530 ! PLOTS PITCH PART OF ENVELOPE
1540 !
1550 DEF PLOT_PIT
1560 PLOT X_POS,Y_POS;X,Y
1570 DO UNTIL UCASE$(INKEY$)="N"
1580 IF JOY(0) BAND 16 THEN
1590 LET M=5
1600 ELSE
1610 LET M=1
1620 END IF
1630 IF JOY(0) BAND 4 THEN LET YY=YY-4*M
1640 IF JOY(0) BAND 8 THEN LET YY=YY+4*M
1650 IF YY>715 THEN LET YY=715
1660 IF YY<107 THEN LET YY=107
1670 PLOT X_POS,Y_POS;X,Y
1680 PLOT X_POS,Y_POS;XX,YY
1690 LET X=XX:LET Y=YY
1700 PRINT AT 1,22:(YY-411)/16;" "
1710 PRINT AT 2,25:(YY-Y_POS)/16;" "
1720 LOOP
1730 PING
1740 SET LINE MODE 0
1750 PLOT X_POS,Y_POS;XX,YY
1760 SET LINE MODE 3
1770 LET X_POS=XX:LET Y_POS=YY
1780 LET GRAPH(2,N)=Y_POS
1790 END DEF
1800 !
1810 ! PLOTS GRAPH BACKGROUND
1820 !
1830 DEF DRAW
1840 GRAPHICS HIRES 4
1850 SET LINE MODE 3
1860 SET PALETTE 0,WHITE,CYAN,GREEN
1870 PLOT 96,18;96,715,16,105;1264,105
1880 FOR N=105 TO 716 STEP 16
1890 PLOT 88,N;96,N
1900 NEXT
1910 SET LINE STYLE 5
1920 PLOT 88,411;1279,411
1930 SET LINE STYLE 9
1940 PLOT 88,357;1279,357
1950 SET LINE STYLE 1
1960 END DEF
1970 !
1980 ! LISTS ENVELOPE DESCRIPTION
1990 !
2000 DEF LIST_ENV
2010 CLEAR TEXT
2020 PRINT AT 1,1:"PITCH","LEFT","RIGHT","DURATION"
2030 FOR N=1 TO NN
2040 PRINT AT 2,1:"
2050 PRINT AT 2,1:ROUND(P(N)/512,2),V(N),V(N),D(N)
2060 PRINT AT 3,1:"PRESS ANY KEY TO CONTINUE"
2070 LOOK [105:DUMMY
2080 PRINT AT 3,1:"
2090 NEXT
2100 END DEF

```

**DAVE  
RACE**

Here at IEUG headquarters (Viva el Presidente!) we are trying to set some kind of file naming standard. It is a little bit difficult determining what a file actually is when it is called "dubrie\_1". The standard we are adopting is that of a filename extension after the filename consisting of a full stop, followed by an extension code. The codes are as follows:

```

filename.BAS - BASIC
filename.PAS - Pascal source code
filename.LSP - Lisp environment
filename.FTH - Forth source code
filename.WP \ Word Processor Files
filename.DOC / (Saved using SAVE function)
filename.ASM - Assembler source
filename.TXT - ASCII file
               (eg. WP files saved using PRINT option)
filename.EXE \ Executable code
filename     / (eg game/applications program)
filename.REL \ Exos relocatable module
filename.X   /

```

# ≡User Group Activities≡

## Local area user groups

User group activities have in the past been restricted to hypothesising about what we would like to do. Well, we have now decided its time to stop talking and start the proverbial ball rolling.

With the release of the disc interface we will soon be in a position to be able to enter all the members address etc. onto a database program. With this program we can determine concentrations of members in certain areas, something impossible with our old card index system. The ability to sort members into areas means we can finally start to organise local area user groups.

A local area user group is a collection of members who have taken advantage of being in close proximity to each other to organise more frequent and convenient meetings than we could possibly achieve from our base in Central London. This is why we are calling upon you, the members. We're looking for local area organisers.

If you want to become a local area organiser, write to us with your name and address and we will send you guidelines on the creation and maintenance of a local area group (groups can be as formal or informal as you wish). On returning an enclosed form on which you have completed some more in-depth details your name and address will be printed in the magazine. Members in your area can then contact you and hopefully start a local area group.

The IEUG is not just concerned with local area groups - if you have any suggestions for activities or services we should run, write to us and tell us about them. We will do our utmost to provide the best possible support for all IEUG members.

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